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# USSR Report

HUMAN RESOURCES



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## USSR REPORT HUMAN RESOURCES

### CONTENTS

#### LABOR

Comprehensive Approach To Management Organization Urged (B. Mil'ner; SOTSIALISTICHESKIY TRUD, No 11, Nov 84).....	1
Progress of Economic Experiment in Leningrad Discussed (EKONOMICHESKAYA GAZETA, No 2, 3, Jan 85).....	14
Gavrilov Presents Details, Text of Decree, by B.N. Gavrilov Readers' Questions on Leningrad Experiment Answered	
Import of Technical Progress on Labor Productivity Examined (G. Popov; SOTSIALISTICHESKIY TRUD, No 11, Nov 84).....	23

#### EDUCATION

First Deputy Minister Panachin Interviewed on School Reform (F.G. Panachin Interview; UCHITEL'SKAYA GAZETA, 15 Dec 84).....	37
---	----

#### DEMOGRAPHY

Family Role in Demographic Policy Scrutinized (M. Bednyy; PRAVDA, 6 Dec 84).....	43
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## LABOR

### COMPREHENSIVE APPROACH TO MANAGEMENT ORGANIZATION URGED

Moscow SOTSIALISTICHESKIY TRUD in Russian No 11, Nov 84 pp 7-17

[Article by Professor B. Mil'ner, doctor of economic sciences; deputy director, All-Union Scientific Research Institute of Systems Research, State Committee for Science and Technology and the USSR Academy of Sciences: "A Comprehensive Approach to the Organization of Management is Needed"]

[Text] Large-scale measures presently being implemented to improve the planned management of the national economy include a multitude of different organizational forms and methods in addition to planning and economic incentives. The establishment of various types of associations; the transition to a predominantly two- and three-link system of management; the search for new forms of interaction of central, branch, territorial, and primary organs; and the affirmation of target-program principles in management have all been aimed at the introduction of progressive structures that meet the demands of the present stage of economic construction.

#### The System of Economic Management as a Unified Whole

The improvement of management is naturally not an end in itself. Such improvement is primarily intended to have a direct impact on increasing the productivity of social labor, to facilitate reduction of the size and cost of management, to reduce the number of links, and to eliminate the duplication of functions. The effectiveness of management's performance is ultimately characterized by such indicators as the lowering of expenditures of working time in production, the degree of rational utilization of all types of resources, and the overall end results of economic activity.

This is why bringing the system of management of the socialist economy into line with the existing level of development of the productive forces cannot be regarded as a one-time campaign in pursuit of exclusively short-term goals. This is a sequential process and the results of every stage of the process must be examined to determine the content of the ever more complex social, economic, scientific, and technical problems posed by practical demands. Such was the course indicated by the party in the decisions of the December (1983) and February and April (1984) Plenums of the CPSU Central Committee.



The unity of all elements of the national economic management system demands a comprehensive approach to the development and implementation of measures to improve it. Such an approach makes it possible to focus attention on the integration of structural and functional features of the system into an organic whole and helps to optimize the mechanism behind this integration. "Only the comprehensive, interconnected examination of questions pertaining to the improvement of the system of management," it was noted at the December (1983) Plenum of the CPSU Central Committee, "can resolve the problem of utilizing the inherent advantages of the socialist mode of production to the fullest."

It is specifically from this point of view that it is important to use uniform methods and a uniform plan to elaborate the problem of organizing the management of all constituent elements of the national economic system: the productive and nonproductive spheres; branches and territories; ministries; industrial and production associations; and comprehensive target-programs of all levels and types. Functional elements of management are another direction of analysis. Naturally, the organizational forms of management cannot be examined in isolation from other its aspects: economic, information-technology, legal, socio-psychological, etc. The complexity, the many facets of management processes and the types and objects of activity demand that we abandon one-sided attempts at improving individual elements of the system. The comprehensive approach is the necessary and only possible approach here.

The system of socialist economic management as a unified whole includes a number of subsystems: production planning; the management of scientific and technical progress; management of quality control, material resources, labor, etc. These are "pyramids" of a sort whose apexes consists of the respective agencies: USSR Gosplan, GKNT [State Committee for Science and Technology], Gosstandart [State Committee for Standards], USSR Gosstat, USSR Goskomtrud [State Committee for Labor and Social Problems], etc. In the general complex of measures to improve the economic mechanism and management in the present stage of economic development, the development of production must be synchronized to a greater degree with the improvement of the organization of social labor on a scientific basis. At the present time, new technology plans and NOT [scientific organization of labor] plans drafted at different levels under the aegis of different agencies are not sufficiently coordinated with one another. The advent of fundamentally new technical means and new technologies intensifies the need for corresponding changes in the organizational forms of labor as well as in work norms and wages. At present, the developers of new technology show little concern for these points and the effectiveness of utilization of new technology is significantly diminished as a result.

It should also be remembered that the system of socialist economic management represents the organic unity of the economic mechanism and the organizational structure. The economic mechanism demands certain organizational forms that in turn influence the completeness and effectiveness of its functioning. Accordingly, the action of the economic mechanism may be weakened or strengthened depending on the framework of the organizational structure within which it is used.

The December (1983) Plenum of the CPSU Central Committee defined the goals and basic elements of the program for improving the economic mechanism: improvement of the organizational structure of management at all levels and in all links of the national economy including the precise definition of the functions, rights, and responsibilities of organs of management and enterprises; the close combination of the interests of the state and labor collectives; and improvement of the quality of planning of the national economy based on the demand to accelerate the growth of the socioeconomic effectiveness of social production. It also called for increasing the effectiveness of the entire aggregate of economic levers and incentives: pricing, the credit and finance system, performance evaluation techniques, wages, etc.

However, when we analyze the results of the large-scale, multifaceted effort in recent years, we must call attention to a certain lack of synchronization in the development of the economic mechanism and the organizational forms of management. The transition to a two- or three-link system; the elimination of intermediate links; the enlargement of enterprises and the formation of various types of associations; the formation of a middle link in the form of all-union (republic) industrial associations; the development of target-program forms of management; the coordination of functions at all levels; and other organizational measures objectively demand further improvement of planning and economic incentives. New aspects in the development of the economic mechanism must be more completely coordinated with corresponding changes and refinements in the organizational structure of management. The appropriateness of organizational forms to all other elements of the management system is one of the most urgent management problems.

This conclusion is most obviously suggested by the evaluation of the present large-scale economic experiment to give expand the rights and economic independence of enterprises and associations in heavy and transport machine building, in the electrical equipment industry, and in the food industry in the UkrSSR; in light industry in the BSSR; and in local industry in the LiSSR. Valuable experience in reducing the number of centrally assigned plan indicators has already been amassed. The role of economic norms in the activity of enterprises and associations has been raised. Primary emphasis is now placed on their sale [realizatsiya] of the assigned volume of output in accordance with contracts concluded by them instead of evaluations based on total sales volume or normative net output. A great deal more emphasis is now placed on economic incentive funds which are being used in a new way (especially the production development fund). Of exceptional importance is the establishment of a close dependence between the size of the wage fund and material incentive funds on the end results of production and the increased effectiveness of production as well as the actual broadening of the rights of enterprises and associations to make use of the savings that accrue.

Taking the experience that has been amassed into account, it has been decided to extend the new conditions of management to enterprises in a number of branches -- machine building, ferrous metallurgy; food, light, and local industry; and consumer services -- in 1985. Additional measures are also being taken to strengthen cost accounting; to amplify the impact of economic levers on the acceleration of scientific and technical progress; to improve the use

of labor, material, and financial resources; and to take the specific features of various branches of the national economy more fully into account.

What demands are made on the organizational structure of management in connection with the development of the economic mechanism? First of all, the expansion of the economic independence of the primary link opens up new real possibilities for making the entire system of planned management more flexible, dynamic and efficient without downgrading the role of centralized management and oversight. Under these conditions, the organizational structure of branch management presupposes first and foremost the precise distribution of tasks and functions among ministries, all-union industrial associations, and economic organizations. Changes in the economic mechanism require the more precise delineation of areas of responsibility for the satisfaction of the needs of the national economy. In no way does this mean that branch systems have to be abolished or greatly modified or that new agencies and services have to be established. The most important thing is to alter the nature of interaction between structural elements of management and to use existing organizational forms most completely and consistently.

"We have a tremendous number of enthusiasts who want to rebuild every which way," V. I. Lenin wrote, "and these reconstructions lead to calamities of a kind that I have never known in all my life. I am very well aware of the faults of our government machinery in mass organizational work...The point is, however, not that it should be improved by rapid reorganization...but that a different level of economic efficiency should be attained. That is the whole point."<sup>1</sup>

The development of organizational forms of the basic link (enterprises and associations) is determined by general trends that formed in preceding decades and that persist to the present. The level of concentration, specialization and cooperation in production in various branches of industry is being raised to certain optimum depending on the specific features of these branches. Various types of large production associations have formed under this influence and have demonstrated their high effectiveness. Among them:

-- production associations engaged in mass and large series production in the automotive and tractor industry, agricultural machine building, and other branches of industry (ZIL [Moscow Automotive Plant im. Likhachev], VAZ [Volga Automotive Plant], KamAZ [Kama Automotive Plant], and others);

-- production associations (combines) in ferrous and nonferrous metallurgy; in the chemical, petrochemical, pulp-paper, and certain other branches of industry;

-- machine building associations engaged in series and custom production and medium-size associations that are managed by a head [golovnoy] plant (factory);

-- territorial production associations of single-product branches of industry (coal, oil, gas);



-- mammoth, diversified production associations in machine building (Uraltiazhmash [Ural Heavy Machine Building Plant], KhEMZ [Kharkov Electromechanical Plant], Atommash [Atomic Machine Building Plant], the Minusinskiy complex, and others), and in certain other branches of industry;

-- production associations in the energy system of the USSR Ministry of Power and Electrification;

-- production associations with separate management forming within the framework of krays, autonomous republics and oblasts (meat and dairy, food, timber, local industry; consumer services, etc.); and

-- science-production, scientific research, and other associations.

The present task is to use the experience that has already been amassed as the basis for the further organizational and economic integration of various spheres of activity and types of production into unified complexes based on their common technological and territorial aspects; to strive for the concentration and centralization of the scientific and technological base; and to achieve the closer combination of science, production, and sales in both a technological and organizational sense. Here it is also important to draw upon a certain system of relatively independent, highly specialized medium-size and small enterprises that produce a variety of interbranch products and that engage in different types of production ranging from mass to custom and small series production. Since these enterprises have a simple organizational structure, they can react more quickly and flexibly to changes in the need for producer goods and consumer goods.

The territorial principle is coming to play a more important part in the formation of production associations at both the branch (especially in machine building, in the mining industry, in capital construction, in the timber and pulp-paper and other branches) and interbranch level. As already repeatedly noted, branch barriers should not be an obstacle to the formation of unified economic production complexes that integrate specialized types of production of final products since it is specifically the unity of their scientific-technical and technological base and the centralization of auxiliary and service-type production that are the main sources of their high economic effectiveness. In our opinion, enterprises and associations must be given the right to establish on a contractual basis joint enterprises, organizations and associations to perform centrally determined economic production activity in the interests of the cooperating parties in order to secure the more effective utilization of resources.

It would also be useful to develop the organizational forms of the basic link still further. The reference is to various types of associations: "vertical," "horizontal" and mixed as well, as associations forming on the basis of the combination of different spheres and branches (science-production, science-technology, agriculture-industry, etc.). It is evidently also essential to establish organizations and enterprises on the basis of inter-economic cooperation. This does not exclude but to the contrary presupposes increased attention to the work of relatively ineffective

production associations, comprehensive analysis of their activity, and their reformation wherever necessary. It is important to make feasibility studies of projected complexes and to include proposals on optimal product mix and management systems in these studies.

Scientific research and progressive know-how confirm the feasibility of improving the organizational structures of management of associations and enterprises in the following directions:

- the use of target-program methods; the increased horizontal coordination of functional links; raising the responsibility and authority of lower and middle management; the freeing of higher-level management from routine, everyday work;

- the reduction of the size of the management apparatus due to the higher skill level of cadres, the combination and integration of functions, the mechanization and automation of managerial work, and the application of the Shchekino method to the pay and organization of the work of managerial personnel;

- the development and introduction of progressive management technologies; the reduction in the number of links; simplification of decision-making procedures; centralization of management functions; the introduction of appropriate data processing systems and other modern decision-making techniques; and

- the involvement of the working people in production management.

The policy of delineating functions, rights and responsibilities extends from the primary link of production to the branch level of management. Any change that is made in the organization of any part of the system of management requires appropriate refinement and restructuring of all elements of the system because they are links in the same chain. At the same time, it is necessary to consider the fact that the most important task of management is to perform general, including coordinating, functions that in the words of K. Marx originate "from the movement of the entire production organism as distinct from the movement of its independent organs."<sup>2</sup>

#### Coordination is Needed at All Levels

Let us now turn to certain key problems in the organization of management as a whole at both the branch and the territorial level. Unfortunately, the present situation is such that certain production ministries do not exert a real influence either on the portfolio of orders or on the sale of products of subordinate enterprises and associations. Agencies of USSR Gosplan frequently distribute material resources and finished products directly and in so doing bypass the ministries that bear the specific responsibility for satisfying the national economy's needs for certain products.

Or let us take the equally urgent manpower problem. The lack of coordination of the activity of branch and territorial organs of management, in particular, of ministries and local agencies responsible for the distribution

of personnel, makes itself known here. We know of numerous instances in which newly activated enterprises are unable to reach rated capacity for a long time owing to the lack of manpower.

Many questions are arising in connection with the general education and vocational training reform. First of all, plans for training workers in various specialties should be coordinated beforehand with both branch and regional plans for the development of various kinds of production. An

important part here should be played by youth vocational guidance programs in which branch ministries should play a most active part.

Let us continue. At the present time, ministries frequently duplicate the functions of subordinate economic organizations with respect to the everyday management of production: the drafting of the plan; the utilization of labor, material and financial resources; day-to-day regulation of production activity; and finally, interaction with "external" -- planning, economic, project-planning, and other -- organizations. In practice, these matters are handled by agencies at various levels, whose competence is not clearly delineated. But if enterprises or associations bear real economic responsibility for the consequences of the decisions that are made, the ministries bear virtually no such responsibility whatsoever. Therefore in our view, we should return once more to the question of the middle link, i. e., organizational forms and the economic role of all-union industrial associations (VPO's).

In the branch structure of management, VPO's stand between the primary link and the ministry and it is specifically this status that requires the precise definition of their functions and responsibilities. Organizational problems here are numerous. First, VPO's (by design and in accordance with the established principles) are economic organizations, but their management apparatus forms and functions as an administratively planned apparatus. In our opinion, this makes it difficult for them to perform many functions and even though it would seem that VPO's are vested with numerous rights, they do not produce the anticipated effect. In most cases, the VPO apparatus is preserved from the former glavki [main administrations]; it has the same composition and structure, performs the same functions, and enjoys the same rights. Second, the sales volume for many large production associations is established at a no lesser level than for medium-size and small VPO's. They are subordinate to the central apparatus of ministries and nonetheless are deprived of many rights corresponding to their real responsibility. Third, since VPO's do not have their own balance sheet and their own working capital, and do not conclude contracts with anyone, VPO's by virtue of their legal and economic status do not and cannot bear material responsibility for the failure of subordinate enterprises to fulfill their plan. Fourth, the functions of VPO's are frequently duplicated both in the highest link (the ministry) and in the primary link (production association and enterprise).

What is the solution to the problem? It seems to us that there is direct sense in making the transition (where possible) to a two-link system of



management by making large production associations subordinate to branch ministries. In a number of branches, such experience already exists. In some instances, there is no need for VPO's whatsoever.

Then, when the existence of all-union production associations is economically and organizationally justified, they must be transformed into organs of true economic management of corresponding subbranches, that function on the basis of consistent cost accounting and that are responsible first and foremost for the development and specialization of production, for the acceleration of scientific and technical progress, and for product quality. Therefore, they should obviously be vested with the corresponding rights and given the responsibility of resolving questions relating to the planning, distribution and allocation of resources as well as questions in the area of economic incentives. It is important to organize such VPO's in such a way that they include research and development organizations and science-production associations. What is more, in our opinion there is a need for interbranch VPO's and to make them subordinate to two or more ministries when necessary. It would also be useful to bring the organs of management of the VPO's closer to the places where production is concentrated.

The granting of economic independence to enterprises and associations will establish economic and organizational conditions for altering the functions and sharply curtailing the volume of routine management activity of ministries which will then be able to devote more attention to the economic, scientific and technical strategy of development of branches.

It seems to us that the forecasting and long-range planning of the branches' requirements for the necessary resources, the distribution of products and resources, and the formulation of programs for the development and intensification of production should be concentrated at the ministry level. Ministries will then be able to concentrate their efforts on the development of comprehensive measures to satisfy the need of the national economy for branch output at minimum cost.

Such differentiation of tasks and functions in branch management would significantly simplify the technology and accelerate the preparation, coordination and approval of planning decisions in the area of production, scientific-technical supply, organization, work norming, etc.

Naturally, the system of branch management cannot be organized without being closely coordinated with the resolution of a number of interbranch organizational problems, particularly the problem of overcoming departmental and localistic trends. After all, the division of the system of national economic management into organizationally distinct branch, territorial, and functional links generates a certain measure of departmental separateness. It goes without saying that such separateness of organs of economic and state management frequently leads to the multiple-level coordination of decisions in practice, to the elaboration of documents that duplicate one another, to additional statistics, oversight, etc. This in turn cause the growth of the management apparatus; the emergence of superfluous linear and functional links; parallelism; the unprofessional execution of functions; and irresponsibility. There is also an increase in the number of personnel and

the cost of maintaining it. The effectiveness of all social production and the quality of labor decline. This is manifested in the deterioration of production-related and scientific-technical cooperation, in the scattering and irrational use of resources, and in the failure to meet planned production targets.

The problem of eliminating departmental separateness and of increasing coordination on a branch and territorial scale becomes still more urgent in connection with the formulation of the qualitatively new task of economic development and scientific-technical progress, which require the formation of multiple-branch, national economic and territorial production complexes and the execution of large-scale comprehensive target-programs. It is appropriate to mention in this regard the fact that the 25th and 26th CPSU Congresses deemed it expedient to organize the integrated management of groups of interconnected branches -- fuel-energy, transport, machine building, etc., and to coordinate their interaction at various levels.

As an example, let us turn to machine building which accounts for more than one-fourth of industry's gross output, employs two-fifths of the country's industrial workers, and half of its engineers, technicians, and white collar workers. Branches, enterprises, technological design, and other machine building organizations must essentially comprise a single complex; they are closely connected with one another in a production and scientific-technical regard. Nevertheless, each branch works separately to improve the organization of production and management, systems for organizing work norming and pay, and the efficiency of the management apparatus. What is more, many measures are not coordinated with one another and manpower and resources are frequently expended in vain on their preparation and execution. Effective organizational forms of management of the machine building complex as a whole have not yet been found. As in the past, thousands of associations, enterprises, production facilities, and shops engaged in the production of the same types of machine building products are still deconcentrated between numerous ministries that specialize in machine building as well as those that do not, and their activity is still not sufficiently coordinated.

Even the subject specialization of branches, the basis on which many ministries have been formed, is frequently not adhered to. So it is that plants belonging to the Ministry of Heavy and Transport Machine Building produce only 17 percent of the hoist-transport equipment while the remaining 83 percent is produced at enterprises belonging to 35 other ministries and departments. The situation is similar with road building and municipal equipment. The level of technological and part specialization is even lower. Centralized specialized production of blanks is only 3 percent of the total, including castings -- 4.5 percent. The number of plants specializing in the production of forgings and dies is still extremely low. Specialized enterprises produce less than five percent of all interbranch parts and assemblies. All this reduces the effectiveness of branch production and leads to irrational expenditures of labor. However in our opinion it is practically impossible to organize the management of the entire machine building complex using existing, already known organizational forms and methods. Obviously, new solutions can be found only if machine building is viewed as a unified system that is oriented toward certain end goals.

It seems to us that the paramount task here is to secure coordinated interbranch interaction at all levels. This will probably require the more consistent appointment of head ministries responsible for the production of certain types of products for the needs of the national economy; the establishment of interbranch industrial and production associations, including enterprises and organizations belonging to different departments; and the intensification of the coordinating functions of planning and distribution agencies. In some cases, there may also be a need to establish special coordinating organs, but this must obviously be done only by freeing part of the apparatus as a result of general improvement in the organization of the system of management. Naturally, no increase whatsoever in the size of the apparatus can be permitted.

New problems also arise in connection with the execution of national economic, regional, interbranch, and branch integrated programs, including economic development programs, scientific-technical programs, etc. The reference is in particular to "Labor" [Trud] programs that have been devised and are being successfully executed in a number of regions of the nation. In the present stage of development of the socialist economy, they represent an important form of solving large-scale problems on an interbranch basis. The execution of such programs requires the use of significant resources and the coordinated participation of many organizations (branch, territorial, departmental).

However, branch and functional management is highly specialized, the economy frequently suffers from the lack of coordination of common programs. How can this problem be solved? It seems to us that depending on concrete conditions, the solution may lie in the creation of special temporary agencies or in vesting existing agencies with new authority enabling them to effectively coordinate the activity of many organizationally separate performers. When quite a large number of target-programs are being managed, it is advisable to use matrix forms at various levels thereby making it possible to secure the precise interaction of linear-functional and target-program structures.

In our view, it is especially important to vest organs administering programs with economic rights, to supply them with the necessary reserves and economic incentive funds, which will probably require making appropriate changes in the statutes on ministries, departments and associations and in other normative documents.

When we speak of the comprehensive approach to the organization of management, we cannot fail to mention territorial production complexes (TPK's). As practice shows, they are qualitatively new objects of management that are distinguished by their multibranch character, their technological interconnectedness, the high degree of cooperation of basic and auxiliary production, and various types of infrastructures. The creation and development of TPK's require the resolution of many scientific-technical and economic problems, the most urgent of which is the timely supplying of TPK's with manpower.

A common feature of all territorial production complexes (TPK's) under the 11th and 12th Five-Year Plans is that they are called upon to exert a major influence on the economic and socioeconomic development of the country's



principal regions and on the general development of the productive forces. Owing to the multibranch character of the complexes and the considerable scale of the intraregional cooperation arising in connection therewith, there is need for special forms of coordination of the activity of organs of branch and territorial management. Local labor organs are called upon to play a role of no little importance, in particular, in providing TPK's with labor resources and in monitoring their utilization. In order to secure the comprehensive development of all branches belonging to a TPK, the use of other resources of the region (raw material, energy, transport, etc.) should also be coordinated.

As shown by the experience of organizing management in the West Siberian, Kansk-Achinsk, Kola and other territorial production complexes, various forms of organizational solutions can be used depending on their specific features. According to one variant, associated directorates of newly built enterprises can successfully provide day-to-day interdepartmental coordination of the activity of enterprises and organizations directly on the territory of the TPK. Personnel of branch ministries and organizations subordinate to them are invited to participate in their management apparatus. Territorial councils of directors of enterprises and organizations belonging to a complex can be formed under associated directorates which will also include representatives of local organs of management.

Analysis shows that for TPK's in which one branch is clearly predominant, it is expedient to adopt an organizational system of management based on a head ministry. For the day-to-day resolution of problems, it is possible to recommend the on-the-spot creation of special production administrations subordinate to head ministries.

Associated directorates of newly built enterprises for multibranch TPK's will represent only one possible form of joint management. They can be formed on a contractual basis from the shared resources of interested ministries and organizations. Interbranch industrial or science-production associations can also become forms of joint management.

As research has shown, joint forms of management can be widely and effectively used in the agro-industrial sphere, in the integrated exploitation of multiple-component minerals, in the construction of industrial centers, etc. Their creation would make it possible in the necessary instances to maneuver resources (including labor resources) efficiently, which is especially important for new industrial regions where TPK's are established for the most part.

The problem of coordination, of securing the closer interrelationship between various links must also be resolved in the process of improving the organizational management of scientific and technical progress. Interbranch coordination of activity in this area is especially necessary, in particular, for implementing the target-program for curtailing manual labor, in the compilation and fulfillment of which many departments are already participating and will participate in the future.

The formation of temporary collectives and integrated science-production associations responsible for the development and introduction of whole

economic and technological systems will be an important organizational measure for accelerating scientific and technical progress. They must unify research, design and project-planning organizations and must have a sufficiently powerful production base in the form of several plants, special divisions specializing in the introduction of the results of R&D, and a personnel training center.

It seems to us that for every principal direction of scientific and technical progress, we should establish integrated science-production associations and vest them with the necessary rights and resources. We should at the same time define their responsibility for the development and introduction of economic and technological systems that ultimately ensure the technical renovation of production and their attainment of a technical level on a par with the best in the world. The principal object in the planning of new technology must be not individual types of machines, but whole technological systems, each of which is characterized by its own effectiveness indicators. The end results of the work of NPO's will then be visible. This will make it possible to link new technology development plans with plans for production, for raising labor productivity, for reducing production costs as well as with capital investment and construction plans.

#### On Cadres and the Style of Management

The organizational structure and the economic mechanism are more than the composition of organs and official positions, plan indicators and incentive systems. They are above all people without which no management system can function. No matter the automated systems with which the economic activity mechanism may be equipped, man has been and always will be the subject and the object of management. The raising of the role of the working people and the development of democratic principles in production management are a key factor in the integrated approach to management that reflects the strategic direction of the party's socioeconomic policy.

Under socialism, the task of involving the working people to the maximum in the production management process corresponds to both objective regularities in the development of the productive forces and to the nature of production relations based on public ownership of the means of production. The new type of brigades, which are primary cells in the system of economic management, have become an effective means of resolving an important socioeconomic problem in our day. The fate of the entire complex of measures to improve organizational forms of management of enterprises and associations will depend in large measure on their successful resolution. As we know, the modern brigade assumes responsibility for attaining certain economic results in their work. At the same time, it receives the right to resolve many production-related and social questions (to draft plans, to distribute earnings and bonuses, to make rational use of resources, etc.).

Practically speaking, the brigade form of labor organization and wages is already causing certain changes in the adopted management and planning systems. In what directions do they make themselves known?

The orientation of production management toward the brigade means the timely and substantiated establishment of plan targets, the organization of the recording of the work of its members, the supplying of brigades with all types of resources and services -- repair, transport, etc. At the same time, the self-manageability of primary labor collectives relieves the higher links of certain functions. The primary collectives themselves take a more active part in the management of the enterprise's affairs in general. The participation of labor collectives in management and the increased economic independence of enterprises and associations make new demands on the style of management of modern production. The ground disappears from beneath the feet of those managers who on every occasion expect instructions "from above," who do not try to take the personal and collective interests of workers into account, who are incapable of approaching work creatively. Many managers have difficulty surmounting the psychological barrier and breaking away from the stereotype of being purely a doer. Nor can we fail to see that some managers have grown used to one-man decision-making and do not involve the collective in management processes. Such a practice is no longer possible today.

This is why work with management cadres, the formulation of personnel policy and the style of management corresponding to the demands of modern production acquire an important role. And here a paramount role is assigned to raising the professional level of personnel and to the development of management skills under new conditions. The training and advanced training of managers in economics should be improved, their training in collective decision-making techniques should be mandatory, the advantages of such an approach should be demonstrated, and managers should be introduced to the positive experience of worker participation in management. Training in social psychology, which is instrumental in the constructive resolution of conflict situations, in creating a favorable moral and psychological climate in the collective, and which in general promotes business and interpersonal contacts, acquires great significance. It is for this very reason that it is important to offer more courses in management psychology and special training in social psychology for managers, including business games, discussions, and situational analysis that can teach them the necessary communication skills and how to organize collective activity.

The special training and retraining of cadres are effective means of developing socialist enterprise, of instilling a style of managerial activity that is characterized by own initiative and that rewards the initiative of subordinates. A high degree of personal organization and discipline must be combined with democracy, with respect for the opinion and will of the labor collective, with attention to the interests of workers, and with concern for subordinates. Both the system of training and everyday practice should be oriented toward propagandizing an implacable attitude toward all manifestations of red tape and formalism, a creative approach to the solution of management problems, and efficiency.

#### FOOTNOTES

1. V. I. Lenin, "Polnoye sobraniye sochineniy" [Complete Collected Works], vol. 44, p. 326.
2. K. Marks and F. Engel's, "Sochineniya" [Works], vol. 23, p. 342.

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LABOR

PROGRESS OF ECONOMIC EXPERIMENT IN LENINGRAD DISCUSSED

Gavrilov Presents Details, Text of Decree

Moscow EKONOMICHESKAYA GAZETA in Russian No 2, Jan 85 p 17

[Report by B.N. Gavrilov, deputy chairman, USSR Goskomtrud: "Wages for Design and Production Engineers; Official Materials"]

[Text] As already reported in EKONOMICHESKAYA GAZETA [No 49, 1984], an experiment which has been going on since July 1983 at design engineering and production engineering subdivisions of five Leningrad production associations has, since the beginning of 1985, spread to a large group of machine building enterprises and organizations. The experiment concerns improving the wage system for design engineers and production engineers.

By request of the editors, B. N. Gavrilov, deputy chairman, USSR Goskomtrud [State Committee on Labor and Social Problems], tells how the experiment is going in Leningrad, and the reasons for spreading the experiment on such a scale.

Increasing interest in raising the technical level and quality of products and in carrying out a larger volume of work with fewer workers--this is the essence of the experiment being conducted in accordance with a decision of the USSR Council of Ministers at the design engineering and production engineering organizations and services which belong to the "Izhorskiy Zavod", "Leningrad Metallicheskiy Zavod", "Nevskiy Zavod", "Elektrosila", and "Leningrad Elektromekhanicheskiy [Electrical Motor Engineering] Zavod" Production Associations.

If one takes into consideration the fact that implementing scientific-research and experimental design developments takes two to three years and more, it is premature to summarize the final results of the work of these associations, which have been operating under the new conditions for the last year-and-a-half. Nevertheless, one can already notice positive results according to the indicators defined by the conditions of the experiment.

Above all, the creative initiative of the design and production engineers has increased significantly; the volume of their work has grown, the amount of time for carrying it out has decreased, and the technical level of their projects has improved.

All of this was achieved because of careful preparations for the conduct of the experiment and thorough introduction of all its elements: standardization of the labor of all basic jobs carried out by design and production engineers; and bringing the plan not only down to the sections and bureaus, but right down to each person who carries it out, on the basis of approved norms. This allowed increasing the validity of the plans significantly. In conjunction with extending broad rights directly to the primary design and production engineering collectives for granting material incentives to the workers, these measures permitted sharply increasing the labor productivity of the design and production engineers (by 15-17 per cent), and supported carrying out increasing volumes of work with fewer personnel.

The possibility of increasing material incentives within the limits of the established wage fund was demonstrated in practice.

As experience has shown, introduction of the experiment must be preceded by a great deal of preparatory work on establishing and checking norms, planning methods, and certifying the workers. One of the chief elements is a sufficient accumulation of "free" resources from the wage fund (not less than 6-8 per cent), which permits establishing a sufficiently large amount of supplements to the salaries during the period of carrying out the most important or especially urgent work.

Practical experience has shown that only such an approach to establishing supplements turns out to be most effective. Transferring to the primary collectives (departments) of design and production engineers the rights to manage the funds which have accrued to these subunits by virtue of savings in the wage fund has significantly raised the initiative of the collectives, and has led to the creation of a new organ of collective management--the department soviet.

As a result, in all five associations there was a significant reduction in the number of personnel in the design and production engineering subunits; nearly 800 staff positions were freed (including vacant positions), which amounts to 9.7 per cent of the total number recorded at the beginning of the experiment.

The improved work of these associations was also supported by the fact that the course of the experiment is under the constant control of the Leningrad CPSU Obkom. A methodological group has been formed here from specialists from enterprises, scientific organizations and higher educational institutions.

During the course of the experiment, the conditions for conducting it were made more precise. Proceeding from this point, USSR Goskomtrud [State Committee on Labor and Social Problems] and the AUCCTU gave their approval to, for example, a supplement on directing savings from the wage fund not used from the previous year, to incentive pay for the workers.

In October 1984, a number of additional supplements were issued to the regulations for conducting the experiment, expanding the rights of the associations in utilizing savings from the wage fund, and establishing

supplements to salaries. All of these supplements were accepted on the results of thorough discussions with those taking part in the Leningrad experiment.

Taking into consideration the above proposals, the "Leningradskiy Elektromekhanicheskiy Zavod" production association was given permission to place all engineering and technical workers and employees under the conditions of the experiment. This is a new aspect for increasing the responsibility and interest of the participants in introducing new equipment and technology, within the framework of the entire labor collective.

At the same time there was also a significant increase in the number of participants in the experiment, which since 1 January 1985 has spread to the workers of design and production engineering organizations and subunits of a number of production and scientific-industrial associations (enterprises) and organizations of Minenergomash [Ministry of Power Machine Building], Minstankoprom [Ministry of the Machine Tool and Tool Building Industry], Minpribor [Ministry of Instrument Making, Automation Equipment, and Control Systems], Minkhimmash [Ministry of Chemical and Petroleum Machine Building], Mintyazhmash [Ministry of Heavy and Transport Machine Building], Minelektrotekhprom [Ministry of the Electrical Equipment Industry], Minsel'khoz mash [Ministry of Tractor and Agricultural Machine Building] and USSR Gosstroy [State Committee for Construction Affairs].

As is well-known, a large-scale economic experiment is being conducted in these ministries. Thus, the Leningrad experience in improving wages for design engineers and production engineers is becoming an integral part of the economic experiment being conducted in industry.

By request of the readers, the text is published below of the Regulations governing the conduct of this experiment, with supplements as of 1 January 1985. Supplements are printed in boldface type.\*

Regulations on the Procedure for Conducting the Experiment  
for Improving Wages of Design and Production Engineers

Approved by the decree of USSR Goskomtrud and the AUCCTU of 11 April 1983 (No 73/8-87), with supplements introduced by USSR Goskomtrud and the AUCCTU of 24 October 1983 (No 239/22-15) and 29 October 1984 (No 316/21-3).

1. This Regulation is to be introduced to design and engineering organizations and subunits of industrial associations for the purpose of increasing the responsibility of the workers for the technical level and quality of their projects; for improving their wages and increasing their interest in carrying out greater amounts of work with fewer personnel.

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\* Passages rendered in boldface in text will be enclosed in virgules.

The list of design and engineering organizations and subunits occupied with developing new high-efficiency equipment and technology, who will be taking part in conducting the experiment, will be approved by the general director of the production association and coordinated with the appropriate ministry.

2. The general director of the production association, with the consent of the trade union committee, approves the organizational and technical measures which support increasing the level and quality of drafts and projects, labor productivity of the workers at design and production engineering organizations and subunits, improving standardization of labor, reducing the number of workers, improving the management structure for design and production engineering organizations and subunits and providing technical equipment for the workplaces of design engineers, production engineers, and project engineers. At the same time the following must be provided:

development and introduction of normatives for determining the labor-intensiveness of scientific-research, design engineering, production engineering and other kinds of jobs, regulations on brigade labor organization for design and production engineers, methods and forms of accounting for the volume and quality of work carried out and plans for evaluating the contribution of each worker in developing new high-efficiency equipment and technology; and,

preparation and introduction of certification of workers at organizations and subunits at which the experiment will be conducted.

The administration of the production association, in conjunction with the trade union and other social organizations, will conduct the necessary organizational and explanatory work, and will inform each worker in an organization or subunit of the conditions and system for conducting the experiment.

3. For the organizations and subunits taking part in the experiment, the general director of an association, on the basis of the number of workers in accordance with the table of organization of these organizations and subunits for a definite date, will approve the permanent wage fund for the workers, the amount of which will be reported to the ministry.\* This fund includes the amount of the actually-established salaries and supplements in accordance with point 53 of the decree of the CPSU Central Committee and USSR Council of Ministers of 12 July 1979, No 695; point 7 of the decree of the CPSU Central Committee, USSR Council of Ministers and the AUCCTU, of 24 December 1976, No 1058; and point 3 of the decree of the USSR Council of Ministers of 5 June 1957, No 660; as well as the amount of the additions to wages, in accordance with point 6 of the decree of the USSR Council of Ministers of 4 December 1981, No 1145. Excluded from the fund is the average annual amount of resources (calculated on the basis of the last three years), disbursed for temporary disability.

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\* This fund is approved for associations and enterprises which have switched to the experimental conditions in 1985, according to their status of 1 October 1984.



When there are changes to the planned volume of scientific-research, experimental design and engineering projects, the wage fund for design and production engineering organizations may be amended in terms of the normative approved by the ministry, according to the system stipulated in point 51a of the decree of the CPSU Central Committee and USSR Council of Ministers of 12 July 1979, No 695.

/For those organizations and subunits taking part in the experiment, savings in the wage fund not used in the current year are not subject to removal from the budget, nor are they subject to transferral to the material incentive fund, and may be utilized for material stimulus of the workers of these organizations and subunits in the next year/ (Decree of USSR Goskomtrud and the AUCCTU of 24 October 1983).

4. For the entire period of conduct of the experiment, the ministry establishes for the production association the task for increasing labor productivity in standard net production, which is not subject to change in connection with reducing the number of workers as a result of conducting the experiment.

The task for reducing the number of workers in the administrative office and expenditures for maintaining them is defined for the association without accounting for the number of workers at organizations and subunits taking part in the experiment, for whom such tasks were not established.

5. The production association is given the right:

a) to establish, within the amounts of the wage fund approved in accordance with point 3 of this regulation, for the design and production engineering organizations and subunits, salaries for category I, II and III production engineers at the level of the wages of the design engineers of the corresponding categories; and also to approve the table of organization for design and production engineering organizations and subunits, and the wages for engineering and technical workers at these organizations and subunits, without the mandatory observance of average wages according to the salary charts, and the established relationships of the number of separate categories of workers.

Reducing the number of personnel as a result of conducting the experiment cannot serve as the basis for abolishing subunits, one of the conditions for the establishment of which is the presence of a certain number of workers.

The wage fund of an association, calculated according to average wages from the salary chart, is determined without accounting for the organizations and subunits which are conducting the experiment. In those cases where there are subunits of a production association which are not taking part in the experiment, the amount of the actually established wages according to the table of organization of 1 January 1983 will be greater than the amount of average wages, and with the consent of the ministry the greater amount will be retained for the duration of the experiment;

- b) at the expense of and within the limits of the wage fund of an association, to award bonuses, with the consent of the trade union committee, to workers in experimental production projects, shops, workshops, sectors and installations carrying out complex work, in increased amounts (above the maximum amounts of bonuses established for the branch or association);
- c) to conduct certification of workers in design and production engineering subunits in accordance with the system which was stipulated for workers at independent design and production engineering organizations in the decree approved by the State Commission on Science and Technology of the USSR Council of Ministers and USSR Gosstroy of 5 May 1969, No 175/58, with subsequent amendments and supplements;
- d) to introduce in the design and production engineering subunits a system of paying wages and bonuses to the workers for the end results, approved by the decree of USSR Goskomtrud and the Secretariat of AUCCTU of 29 December 1982, No 320/20-81, for the designing brigades of the Ul'yanovsk Head Special Design Bureau for Heavy Machine Tools and Milling Machines;
- e) /when paying bonuses for the basic results of economic activity, to pay to the workers at design and production engineering organizations and subunits 50 per cent of the bonus, intended for them for fulfilling the work indicators for these organizations and subunits, independent of the results of the activity of the association (enterprise) or organization as a whole. When the work indicators established for the organizations and subunits are not fulfilled, bonuses are not to be paid to their workers/;
- f) /to establish for the chiefs of the production engineering bureaus in the section of the chief production engineer, salaries on the level of the salaries of the chiefs of the design bureau in the department of the chief design engineer/;
- g) /to utilize up to 10 per cent of the savings from the wage fund of the subunits taking part in the experiment for paying supplements to the salaries of the specialists of other subunits which are a part of the composite brigades for developing and introducing new equipment and technology/; and,
- h) /to establish supplementary payments for the salaries of design engineers and production engineers, and other specialists who have an academic degree, for the period during which they are carrying out especially important work [assignments]/.

Establishing salaries and supplementary payments in accordance with sub-points "f" and "h" of the given point is to be conducted within the limits of the wage fund, approved in accordance with point 3 of this regulation/ (decree of USSR Goskomtrud and AUCCTU of 29 October 1984).

6. Within the limits of the wage fund, approved in accordance with point 3 of this regulation, design engineers and production engineers, chief senior engineers and other engineers directly occupied with developing and



introduction of new, high-efficiency equipment and technology, supplements to salaries may be established for high skills for the duration of the planned periods for carrying out the work or for another period.

The amounts of the supplementary payments are determined in consideration of the personal contribution of each worker to the development and introduction of new high-efficiency equipment and technology; for reduction of labor intensiveness, material intensiveness and energy intensiveness; and for raising the quality of the manufactured products.

Supplements to salaries of design engineers and production engineers, chief senior engineers and other engineers (according to the list of occupations approved by the general director of the association) are established by the supervisors of the organizations and subunits taking part in the experiment, with the consent of the general director of the production association; and supplements to the salaries of the supervisors of these organizations and subunits are approved by the general director of the production associations.

The supplements cited are abolished or reduced when the workers do not observe the terms for completing the jobs or certain of their separate stages; for unsatisfactory quality of work; for ineffectiveness in solving design and production engineering problems which arise in production; and for violations of labor and production discipline.

The system for establishing, abolishing and reducing supplementary payments is determined by the general director of the association with the consent of the trade union committee.

7. Supplements to the salaries of design engineers, production engineers, chief engineers and senior engineers, and other engineers, established in accordance with point 6 of this regulation, as well as additional payments to these workers for combining occupations and increasing the volume of work carried out, are established in accordance with the decree of the USSR Council of Ministers of 4 December 1981, No 1145, and are not limited in terms of amount.

8. Awarding bonuses to workers in design and production engineering organizations and subunits in accordance with the existing systems should be carried out according to their personal contribution to the creation and introduction of new, high-efficiency equipment and technology. At the same time, only those workers are to be awarded bonuses who ensure qualitative and timely fulfillment of the assignments given them, and who have increased the technical level of their research and development projects.

The specific amounts of bonuses for the workers indicated are determined by the supervisors of these organizations and subunits with the consent of the general director of the production association and trade union committee.

9. Labor disputes by workers in the organizations and subunits in which the experiment is being conducted, are to be examined in accordance with established procedures.

## Readers' Questions on Leningrad Experiment Answered

Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 85 p 14

[Article, unsigned: "On the Leningrad Experiment; From Readers' Questions"]

In the second edition of EKONOMICHESKAYA GAZETA for 1985 the regulation on the procedure for conducting the experiment for improving the wages of design and production engineers was published in an updated form. In connection with requests which have come in, a working group for examining and intensifying the experiment for improving the wages of design and production engineers, established at USSR Goskomtrud, has prepared answers to questions and suggestions from the associations and organizations which have come under the conditions of the Leningrad experiment since 1 January 1985. Answers to certain questions are published below:

[Question] The regulation on the procedure for conducting the experiment has established that for organizations and subunits taking part in the experiment, a permanent wage fund is established for the workers, based on the number of workers on the table of organization of 1 January 1983.

On which date should the permanent wage fund be established for the workers of those organizations and subunits which were placed under the conditions of the experiment since 1 January 1985?

[Answer] For organizations and subunits placed under the conditions of the experiment since 1 January 1985, the permanent wage fund should be approved on the basis of the number of workers on the table of organization as of 1 October 1984.

[Question] Are there grounds for carrying out extraordinary certification of the workers at scientific research institutes and design bureaus?

[Answer] It was established by a decision of the USSR Council of Ministers that certification of workers at design and production engineering organizations and subunits would be carried out according to the procedure stipulated for independent design and production engineering organizations.

In accordance with the conditions of the experiment, work was carried out prior to the start of the experiment on certifying designated workers. This procedure should be in effect in the organizations which were placed under the conditions of the experiment since 1 January 1985.

In those cases, when certification was conducted earlier and a three-year period has not yet elapsed since the certification was made, it is necessary to carry out recertification of the workers who are taking part in the experiment. At the same time, the materials from the previous certification may be used.

[Question] As is well-known, the supervisors at scientific research institutes and design bureaus have been given the right to establish, with the consent of the trade union committee, supplementary payments for scientific and engineering-technical workers who do not have academic degrees, for high skills, at the expense of two per cent of the planned wage fund. Could these supplements also be established under the conditions of the experiment?

[Answer] Yes, they can. However, as practical experience has shown, the indicated supplements have a limited effect in the subunits which have been placed under the conditions of the experiment. In these subunits supplementary payments for highly-skilled design engineers and production engineers, who are carrying out the most complex and responsible jobs, are established basically according to the procedure stipulated by the conditions of the experiment.

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## LABOR

### IMPORT OF TECHNICAL PROGRESS ON LABOR PRODUCTIVITY EXAMINED

Moscow SOTSIALISTICHESKIY TRUD in Russian No 11, Nov 84 pp 18-28

[Article by Professor G. Popov, doctor of economic sciences: "Under Conditions of Scientific and Technical Progress [NTP]"]

[Text] As is known, the acceleration of scientific and technical progress is the main factor underlying the growth of labor productivity and economic effectiveness. And in order to secure the rapid and continuous rejuvenation of all branches of the national economy on the basis of advances in science and technology, it is important to constantly improve the control of this progress (utilizing the advantages of socialism) and to develop socialism's characteristic forms for coupling science to production. In order to resolve this enormous task, which the party has placed before us, we must first understand the specific features of the present stage of scientific and technical progress and their impact on management in general as well as on labor in the management sphere.

#### NTP as the Object of Management

Scientific and technical progress (NTP) is the continuous progress of improving the output and means of production of production itself based on advances in science and technology. It is based on scientific and technical potential -- the system of scientific and technical cadres, information, and material-technical support organized in a certain way. The character of NTP is determined by the system of production relations.

The present stage of NTP is unique in that it is taking place under the conditions of the scientific and technological revolution (NTR), which is a qualitative jump in the comprehension of the system of nature's objective laws and in their practical use to effect fundamental changes in the productive forces. Hence the special role of such factors as systems of machines (technological systems), their life cycles (innovation cycles), the nature of activity relating to the development and assimilation of NTP, the scale and dynamics of expenditures on NTP, its effectiveness, etc.

Development in the form of a system of machines is the fundamental distinction of technical progress under the conditions of the modern scientific and technological revolution. Computers are a clear illustration of this point.



Today almost no one uses such a term as the "introduction of computers." In the extreme case, one speaks of the "introduction of electronic computer technology" or more precisely of "the introduction of an electronic (automated) data processing system." And indeed, one can use computers effectively only if one has the full complement of so-called peripheral equipment: input-output devices, external memory, and teletype are a clear illustration of this point. Today almost no one uses such a term as the "introduction of computers." In the extreme case, one speaks of the "introduction of electronic computer technology" or more precisely of "the introduction of an electronic (automated) data processing system." And indeed, one can use computers effectively only if one has the full complement of so-called peripheral equipment: input-output devices, external memory, a teletypisely, in systems of integrated blocks of scientific and technical innovations. This is a "cell" of modern NTP. It is from this basic fact that one must proceed in forming a scientifically substantiated system for the management of scientific and technical progress.

The technical service system is of decisive importance to the functioning of the NTP "cell." Therefore the "technical system" includes the "equipment service system" as a subsystem. What is more, there is a need not only for individual technical systems but for their effective interfacing as well. Thus it is not enough to have a modern fishing seiner. It is also necessary to have refrigerator ships, factory ships, and equipment complexes for unloading cargo delivered to the fishing flotilla's port. Otherwise the return from the use of the most up to date ships will be insufficient owing to the deficient technical equipment of ports, which can lead to heavy losses and to deterioration of the quality of the fish catch due to lapse of many days waiting for the catch to be unloaded.

The "interfacing" of different technical systems is most often an interbranch problem. Container shipments are a typical example. The principal effect of containerization is the reduction of strenuous physical labor in loading and unloading operations. This effect is enhanced considerably by "total" containerization -- the shipment of containers by truck, rail, water, and air, which requires coordination of the design and dimensions of truck trailers, flatcars, ships and the development of a system for managing the entire chain of delivery, mechanized complexes, and transport hubs.

At the same time, we cannot fail to consider the fact that all elements in the technical systems are constantly changing. Figuratively speaking, the basic "cell" of NTP is "alive." This life cycle of NTP is commonly called the "innovation cycle." It includes three links: science-production-consumption. Science provides the understanding of the objective laws of nature and the transformation of this knowledge into scientific conclusions or discoveries that could be used in production. Production materializes the product of science in new producer goods, new technologies and new consumer goods. The utilization of new products takes place in the consumption sphere.

The duration of the innovation cycle is a very important question. The literature on the economics of scientific and technical progress name various durations. It seems to us that 8-10 years can be considered typical of the present stage of NTP. Thus in the area of electronic computer technology,

there have been several 'generations' of computers in the last 30 years. In the postwar years, there have been several changes in passenger aviation technology: piston-engine planes were replaced by turboprop planes; turboprop planes were replaced by jet planes; supersonic airliners came next.

While the overall duration [of the innovation cycle] is very important, it is not the only characteristic of the life cycle of the system of machines. Another important feature is the way in which the entire time of the cycle is distributed between links and stages of the cycle; moreover, this distribution is marked by unevenness and instability. NTP can be "explosive": there can be sudden breakthroughs and the theoretical research of many years can quite quickly become the basis for the practical development of new systems of machines.

And, finally, the economic aspects -- scale, nature of expenditures, and the effect -- are important to understanding contemporary NTP.

When constructing a scientifically substantiated system for the management of contemporary NTP, it is also necessary to remember that different stages in the life cycle of the system of machines have different probabilities of being successfully completed. On the whole, only about 5-10 percent of the expenditures on basic research produce important practical current results even though this percent is more than ample to recoup the cost of basic research. Approximately 80-90 percent of the cost of applied research, on the other hand, yields results that can potentially be put to immediate practical use. This indicator rises to 95-97 percent for scientific and technical development efforts [nauchno-tekhnicheskiye razrabotki].

NTP has always been associated with creativity. But prior to the scientific and technological revolution, the creative process proper has been outside the production sphere and plants were as a rule furnished with ready-to-use inventions. Contemporary NTP includes creative stages as mandatory components in the entire innovation cycle. The existence of creative stages in the cycle increases its probabilistic character because in the creative sphere it is difficult to predict the result itself precisely and all the more so the time required to achieve it.

All these and other features of contemporary NTP must be studied in depth and systematically in order to scientifically approach the problem of managing all associated processes.

#### NTP and Production Management

Considering the characteristic features of the present stage of development, the objects of design, planning, financing, supply, and stimulation in the NTP sphere must be not tons, not rubles, not even tractors or machine tools in general. Technical systems embodying NTP -- harvesting complexes, transport systems, etc. -- must become the objects of management. At the same time, it is also important to consider the need to organize their technical servicing.



Modern complexes of technical devices and systems of machines have become so complex that their maintenance and repair are best handled not by the customer (purchaser), but by the actual manufacturers of these machines. They can employ the most effective types of equipment repair and use all the advantages of large-scale specialized production. They can replace a whole assembly, correct the malfunction at their own repair facility, and recondition the assembly for further operation. After all, the producer has created this entire technical system, has amassed experience in servicing it and on the basis of this experience can and should improve output. Then the customer will frequently not have to acquire a new system; it will be sufficient to modernize various elements in the system with the help of the manufacturer.

The fact that equipment continues to be the subject of concern to the producer in one way or another even after it has been sold has a major impact on the producer. The spare parts problem, which is frequently difficult to resolve notwithstanding the enormous volume of spare parts production, is simplified considerably. First, producers can get by with an immeasurably smaller inventory of parts or assemblies than the contingency inventory of parts or assemblies that customers build up. Second, producers try to improve the design of the machines and parts that most frequently malfunction because when they obtain complete data on all defects, they try to find ways of eliminating them and of improving new models. After all, the cost of repairing a given machine may be so high that manufacturers will prefer to modify its design, use costlier materials, and relieve themselves of the need to make frequent repairs.

The effect that is produced by the equipment service system can be demonstrated on the basis of the example of television sets. There was a time when every television owner had a whole suitcase full of spare tubes, resistors, condensers, etc. -- virtually a second television set. This is only a memory today. The situation was altered by a service system that relieved the plant of the necessity of producing backup parts that merely gathered dust in the owners' homes. The saving that resulted made it possible to recoup expenditures on the establishment of the service network. While there are naturally still many shortcomings in its work, practice shows that they are more of an economic and organizational rather than a technical nature.

The life cycles of the equipment proper must become the primary basis for determining the production management cycle. And since the long-range plan is the basic instrument of management, in our opinion it must depend to a greater degree on the duration of NTP cycles. Since the typical NTP cycle lasts 10 years, the time horizon of management must obviously be a 10-year period.

As already noted, an important feature of NTP is its probabilistic, nonstable, nonstationary character. In order to control processes of this type, the system must possess reserves -- sometimes very considerable reserves. It is specifically reserves that make it possible to realize the unanticipated potential of NTP in a short period of time. There is a need for flexibility in structures, in methods, and in the technology of management and for a

special correlation between centralism and independence. In the management of NTP it is obviously important to preserve central control over operational functions only with respect to the control of the principal, national economic programs of scientific and technical progress. The center will be responsible for making normative decisions within the framework of which branches, regions, and production organizations must work actively and independently.

By virtue of the probabilistic nature of NTP and the considerable share of difficult-to-forecast variants of scientific and technical solutions, centralized management of NTP is only possible in specific forms. First, it cannot encompass all NTP. Even in the invention stage, up to one-third of the inventions demand initiative. The introduction of advances of NTP at enterprises is frequently so specific that it can be effective only if there are creative approaches and independent decisions at the enterprises themselves. Centralized management, on the other hand, is primarily required in the leading links of NTP, particularly in interbranch relationships.

Second, centralized management proper in large measure frequently boils down to the effort to supply the leading sectors of NTP with resources, to the formulation of problems. The establishment of rigid time limits and the increase in the number of specific short-term orders frequently only make it more difficult to arrive at the most effective solutions.

Third, the activism and creativity of people, starting with the authors of an innovation and ending with those who must use it, acquires special significance in the management of NTP. But the key problem regarding activism is the problem of stimulating this activism: a system of rewards for the successful elaboration and introduction of advances of NTP on the one hand and sanctions for deviations from NTP on the other. In view of the indeterminacy of the results of scientific and technical search, the system of incentives and the given time limits cannot in any way be specific for various targets. It must be general and specifically a system of a stimulating situation. At the same time, the end results may vary greatly.

Of course, this cannot fail to be reflected in the character of the corresponding system of rewards. If the range of final totals in the case of stable conveyor production is small and altogether absent if organization is ideal, the system of incentives will naturally also proceed from the idea of small differences in the wages paid to the work force. And in our opinion, if the range of possible results of its activity rises sharply, the possibility of disparities (two- and threefold) in its wages should be contemplated. Otherwise those variants of NTP that entail considerable difficulty and intensity will be rejected beforehand even though they may hold considerable promise.

The heightened interest in technical systems and their cycles predetermines the new approach to the structures of production organizations, subbranches, branches, and regions. They must be such as to concentrate the largest possible number of components of equipment and stages in the cycle "under one roof." It is common knowledge that one of the main advantages of production associations is linked to this specific circumstance.

Also of considerable significance is the fact that contemporary NTP is to an ever more considerable degree realized not only in the construction of new enterprises, but also in the reconstruction of existing plants. This change requires the concentration of significant resources in the enterprises' hands. Since they themselves cannot "materialize" the resources allocated to them, there is a need for a mechanism to "fill" or "supply" this so-called initiative NTP fund. The concentration of the growing number of such resources in the hands of cost accounting organizations also necessitates the establishment of direct ties between them. Then, agreements will include not only the question of what should be done and when but also the question of quality, price, etc. Without such full-blooded, direct relations, even development funds formed at plants will lead to the considerable acceleration of NTP. Attempts to incorporate the funds of cost accounting organizations in centrally planned NTP systems may essentially transform them into centrally regulated NTP funds, which will restrict the possibilities off the lower echelons and also complicate the procedure for managing NTP on a national scale.

An important influence on production and management will also unquestionably be exerted by robots that will accelerate work processes, increase labor productivity, and free people from having to perform strenuous, dangerous, monotonous, and routine operations.

How is the present system of economic management responding to the new NTP phenomena described above? To what degree is it prepared to reckon with and control NTP?

Let us take the structure of management. Today this structure includes centralized, interbranch (functional) organs and branch and administrative-territorial management organs. The matter of the Kirovets tractor is well known. Why was an integrated technical system based on this tractor not completely designed and put into production on schedule? One of the reasons was that the Kirovets was developed by one ministry while the companion machinery was to be developed by other ministries. The unified system of machines lacked a single master that would be both designer and producer. The existing structure of management frequently creates a situation in which single blocks of NTP are broken down into individual parts beforehand. This makes it extremely difficult to develop and assimilate technical systems. As we know, unripe tomatoes will ripen even after the harvest if the appropriate conditions are created. But what can one say about a method that calls for the tomatoes to be cut up into pieces and for trying to get the tomatoes to ripen then?

Similar difficulties also arise in connection with the fact that the duration of the NTP cycle is not properly taken into account. The present system of management is oriented toward such time segments as years, quarters and months. For the management of agriculture, the orientation toward natural and climatic cycles is entirely logical. But life cycles of the technical system and NTP in general are obviously subordinate to other regularities. But today the plans for scientific research work are broken up into parts and are



crammed into one-year and five-year plans. And once again we are confronted by the same situation as the one we encountered in structure. The single whole is divided into parts whereupon there arises the problem of managing the whole and of surmounting the difficulties entailed in linking the parts together again.

One conclusion suggests itself here: if technical systems are not taken into account and if the attempt is made to replace a standard, roughly ten-year, life cycle by shorter cycles (a five-year or one-year cycle), the principle of unity of management is essentially violated and the effectiveness of spending on NTP invariably suffers as a result.

The existing system of management is a system that involves meeting targets. Targets are the basis of the plan and the degree to which they are met or surpassed is the basis of the evaluation system and the incentive system. The management of NTP requires not only the stimulation of various measures, but the existence of a stimulating situation as well: a general interest in NTP and not only an interest in meeting a specific NTP target. There is a cardinal distinction here. If the interest in NTP is general, the attempt is made to introduce items that are in the plan as well as items that are not. What is more, the plan may be rejected in favor of an NTP variant that is more effective from the national economy's standpoint; performers will try to have it modified. But if interest is associated exclusively with the NTP target, there is no guarantee that the best scientific-technical and organizational solutions will be introduced.

The existing management system's ideal is an intensive plan that mobilizes all reserves almost instantaneously. NTP, however, requires reserves -- very substantial reserves -- that can be brought into play immediately in the sectors that may arise in the process of development. The need to have reserves of all types in order to accelerate NTP basically distinguishes the present situation from the situation that called for the full mobilization of all reserves, that regarded any reserve not used in the immediate plan period as a loss to production. The (1979) decree of the CPSU Central Committee and the USSR Council of Ministers on improving the economic mechanism took the first step in the direction of combining the concept of the intensive plan with the concept of maintaining certain reserves. In practice, however, the former approach predominates.

The list of examples could be extended, but the general conclusion is obvious: the present system of management is still not sufficiently coordinated with modern trends of NTP and, in particular, with the specific features of the given stage of the scientific and technological revolution. In our opinion, this is the only possible explanation for the chronic difficulties besetting the introduction of NTP.

While the orientation toward NTP is an important factor, it is not the only factor that contributes to the formation of the system of economic management. We must assimilate the achievements of NTP on the basis of the utilization of the advantages of socialism and methods specifically inherent in socialism. Accordingly, the new system of management must form under the influence of two principal characteristic features: the objective economic laws of developed



socialism and the objective laws of contemporary NTP. The enormous advantage of socialism here is that we are not faced with two different tasks: the task of developing a system for managing developed socialism and the task of developing a system for managing NTP. To a planned economy, these tasks are not identical. And therein lies the principal argument in favor of using the advantages of socialism as a system corresponding to the demands of the contemporary level of development of the productive forces.

#### The Role of Managerial Activity in the Acceleration of NTP

Let us examine in greater detail two ways in which NTP influences the system of management: the problem of managerial activity per se and the problem of management cadres.

Since the times of F. Taylor, the basic concept of the scientific organization of labor has been associated with the idea of standardization and norming. This entailed the clear formulation of the target, the precise indication of ways of meeting the target, the selection of the best approaches, the formulation of the exemplary work method, instruction in all procedures pertaining to this method, and monitoring of the strict observance of the method. The effect here is directly associated with norming and standardization. Hence the logical attempt to articulate centrally the optimal standards with respect to the structure of management, personnel, the technology of management and management techniques, and to introduce them as mandatory together with orders from the center. This was the road to more effective management.

Such an approach is logical for persons performing predominantly physical labor involving repetitive managerial operations in the production sphere. This is entirely in keeping with the standardized system of management with regard to structure, functions, and procedures. The actual stability of the management system reflected the stability of production that was most completely embodied in H. Ford's conveyor belt system.

In the age of the scientific and technological revolution, there have been changes in the actual basis of this system. There have always been innovations. However before World War II and in the first decade following it, innovations were so relatively rare as to be an event at an enterprise. For this reason, production management was "tuned" to repetitive, unchanging technical and economic operations and the precisely standardized, normed system of corresponding managerial actions was considered to be the most effective. The introduction of new technologies, new machine tools, and new products under these conditions invariably disrupted the work rhythm of management.

The most typical change in managerial work today is the change in the correlation of standard and creative elements in this work in favor of the latter. All elements of management and especially management's creative personnel are called upon to display maximum activism, the desire and striving to discover the new and to introduce it into production on a broad scale. And

such activism naturally presupposes that they have a considerably higher degree of independence as well as the necessary rights and potentialities.

In our day, it is often difficult to issue a specific assignment such as: produce such and such a machine. More often it is necessary to formulate a demand of the type: modify this technology in such a way as to cut the volume of strenuous physical labor in half. Or: double the service life of an engine and in so doing reduce specific fuel consumption, etc. It is more difficult to indicate to the performer ways of realizing the given task. Therefore both the concretization of the task and the search for ways of carrying it out must be made the exclusive responsibility of the performer. Strictly speaking, it is not entirely accurate to refer to a worker with such functions as a performer. This is a new type of performer. And the more independently, actively and creatively he thinks and acts, the greater is the chance that he will produce effective variants of scientific and technical solutions.

This is why the key problem in the organization of managerial activity to find ways of increasing the activism of workers rather than standardization and norming.

Centralism ceases to be the centralism of current directives and becomes the kind of centralism that formulates targets and intensifies independent search for ways of defining the targets more precisely and for ways of meeting them. While contemporary management is primarily concerned with what is to be done within a certain period of time, using certain methods, etc., management that has the mission of accelerating NTP substantially is primarily concerned with the final results. And if it is presently logical to base their evaluation on the comparisons with the level of the plan target (percent of target fulfillment, observance of norms, etc.), in the case of management that fully corresponds to the demands of the scientific and technological revolution, this evaluation will be based on the absolute volume of the end result, on the degree of resource utilization. The difference between the two approaches to the organization of managerial activity is graphically demonstrated on the basis of the approach to the discipline problem. Faced with targets that spell out what must be done at a certain time and in a certain way, the question of discipline is a decisive factor in success. If there is total clarity on all other points, the result will depend specifically on the precision of execution, on discipline. But if the very purpose of the performer is to find new, nonstandard solutions, the main criterion of the quality of the work will be the creative approach. The mere fact that a worker sits dutifully at his work station under the watchful eye of his supervisor does not necessarily mean anything from the standpoint of results. Close supervision might keep specialists from shopping or getting a haircut during working hours. However it does not create success but only the basic condition for success in creative work. The free work schedule (which both LITERATURNAYA GAZETA and SOTSIALISTICHESKIY TRUD have written about) will in such a case promote the effort still more. It is also necessary to consider the fact that "the very first ones to come under the knife" in the struggle for discipline are often the ones who "do not follow the rules" but strive for real success in the area of NTP. This is why the efforts to strengthen discipline, important in themselves, acquire a special character under the

conditions of NTP; they must be linked more closely to the evaluation of quality and performance.

The new approach to the organization of managerial activity predetermines the new correlation of economic and administrative levers and day-to-day and strategic leadership. But in place of administrative commands that are clearly associated with a specific target, there is a need for stimuli and sanctions that in general would stimulate interest in NTP as such and would mete out punishment for deviations from the search for optimal variants. This type of interest is best exerted by economic methods. This is why the management of NTP is first and foremost management with the aid of economic levers.

NTP and the need for its acceleration also pose the general managerial personnel problem in a new light. The system for selecting economic managers must, in particular, be more strictly oriented toward technical systems and toward their life cycles. The limits of competence of managers must be precisely defined in such a way that the managers of technical systems and their tenure would be clearly indicated and would take into account the length of the life cycle of technical systems. Under these conditions, responsibility for the detailed project report and its execution will be raised.

The system of incentives for economic managers should be oriented to a greater degree toward the end results of NTP. In our view, we could experiment with a variant in which the basic physical part would comprise the smaller share of the manager's pay, while additional payments [doplaty] would be associated with the results for the year, for a five-year period, or the entire NTP cycle. In principle, there could also be a program that would entitle a manager transferring to a new post to continue to receive for a certain time additional payments for the long-term results of his efforts to introduce NTP at his previous place of employment.

Under the conditions of contemporary NTP, increasing collectiveness in decision making is accompanied by the increased flexibility of structures. In the management apparatus the predominantly fixed structural cells -- linear and functional -- give way to target groups oriented toward fundamentally new technical solutions for whole NTP nodes or blocks. The formation, operation and dissolution of these target programs are closely associated with the solution of specific NPT problems. Temporary groups have recently received the rights of 'citizenship.' This in itself was a step in the right direction. In our view, it would be incorrect to call them temporary since we are discussing a normal, constant form of work involving the grouping and regrouping of cadres as the need arises. They, like brigades operating under contract, require legal norms governing the procedure for forming groups and the rights of their leader and members of the collective.

The present stage of NTP urgently raises the problem of the correlation of the training and advanced training of economic cadres. Before NTP, the most important factor was training, i. e., study in a technicum or VUZ culminated in a diploma which was for the most part the ticket to their future professional life. Now that the demands made on the knowledge and skills of



the work force are constantly changing, training is merely a starting point and people have to systematically improve their qualifications and master new knowledge and skills during the entire period of their labor activity. Consequently the system of institutions that upgrade the qualifications of managerial cadres becomes just as necessary as the system of technicums and VUZ's and advanced training course for workers and engineering-technical personnel. Periodic study at advanced training institutions is also becoming mandatory for the managerial apparatus.

The size of the managerial apparatus has also become a very complex and acute problem. As is known, the total number of managerial personnel and their share in the work force are on the rise in all industrially developed countries. In principle, this is a natural phenomenon and there is nothing dangerous about such growth. Let us assume that a work force of 100 persons (90 workers and 10 managers) presently has a productivity equal to 100. If 10 years later, the ratio of workers to managers is 75:25 and their productivity doubles, such a change will be justified.

This is specifically how K. Marx approached the problem when he formulated the principle of the aggregate worker. He wrote: "The cooperative nature of the labor process inevitably expands the concept of productive labor and its agent, the productive worker. In order to work productively today, there is no need to apply one's hands directly: it is sufficient to be the organ of an aggregate worker and to perform one of his subfunctions."<sup>1</sup> "Supervisory and managerial work...productive labor, the performance of which is necessary for any combined mode of production."<sup>2</sup> K. Marx went on to note: "...One person works more with his hands, another works more with his head..." and "an ever greater number of functions relating to the capacity for work are included directly in the concept of labor productivity; their agents are included in the concept of productive workers."<sup>3</sup>

If the productive character of managerial work in general does not evoke doubt, a variant in which the increase in the share and overall number of managerial personnel is coupled with the more effective labor of the aggregate worker is obviously also explicable. But from this it does not by any means follow that its share can increase infinitely without detriment to the effectiveness of social production. The problem of reducing expenditures of managerial labor and the number of managerial personnel unquestionably exists. After all, the productive nature of the labor of workers does not eliminate the need for continuously reducing the expenditure of their labor and their number. To be sure, there are specific features here. For example, if we go to extremes in reducing the number of workers, the loss will be immediately apparent in the form of idle equipment, lower output, etc. But an extreme or structurally unsuccessful reduction in the number of managerial personnel is not so readily and immediately apparent especially if the reduction is in the "thinking" services not associated with day-to-day management. This circumstance sometimes makes it possible to struggle to for a reduction in force without taking into account the actual costly and long-range ultimate consequences of the reduction in force to NTP, to the enhanced effectiveness of all social production. Moreover, it is essential to consider the existence of other types of managerial activity. It is possible to single out at least two large groups immediately: (1) managers who are organizers of the



production process or scientific-technical activity; and (2) organizers who are also participants in the labor process.

Against the general background of the inevitable trend toward the increase in the number of managerial personnel, we must actively struggle to reduce expenditures of managerial labor and to reduce the number of managerial personnel. However here as in other sectors of management there is a need for a scientific approach rather than for dashing cavalry charges.

What is meant by a scientific approach to reductions in force? It requires at least detailed statistics on the managerial work force by category, occupation, seniority, type of institution, etc. Such statistics do not as yet exist.

A reduction in force today is often in the form of a campaign that is initiated from the top and that is countered by the attempt to conceal managerial personnel from below. The growth of the managerial work force is primarily concealed through the expansion of various kinds of laboratories, institutes, and centers whose departments to a considerable degree perform purely administrative functions: count, analyze reports, prepare draft decisions, and monitor their execution.

The problem of work force size today is greatly exacerbated by the fact that all managerial links that supervise cost accounting production organizations are still operating on the basis of predominantly administrative methods. The dominant criterion in their activity is the degree of fulfillment of targets rather than the economic effectiveness of resource utilization. Even if the targets are related to effectiveness, which is by no means always the case, the main problem is not only the struggle to fulfill the target, but also the struggle for the level, for the degree of intensiveness of this target with all the attendant consequences. But when the managerial organ itself is not directly interested in increasing effectiveness, its approach to the size of its work force will also be determined by other criteria than the interests of effectiveness. The "upper echelons" of management, upon being freed from the need to participate continuously and everywhere in the day-to-day management of all parameters of activity of cost accounting cells will be able to effect a considerable saving by reducing the size of the managerial work force. This is why it is so urgent to centralize economic normative influences and basic long-term national economic programs.

But if we speak not of organs of management proper, but of cost accounting production organizations, owing to the fact that we do not presently have full cost accounting, we do not have the proper motivation to reduce the size of the managerial work force (or the work force in general). But the brigade contract basically does not affect the managerial apparatus. The incorporation of full cost accounting in the management of production organizations, the evaluation of their activity on the basis of the absolute level of the effect of management rather than according to the degree of target fulfillment, and their exemption from the obligation of finding jobs for released personnel will obviously truly provide greater incentive for reducing the size of the managerial work force.

Today a manager usually receives a pay increase upon being appointed to a new position. Hence the increase in the number of tiny sectors, departments, and administrations; the increase in the number of deputies, etc. In our opinion, a properly ordered structure of positions, the introduction of a system of wages based on results, and the introduction of a system of pay raises based on seniority and experience (horizontal growth) will create conditions for reducing the number of managers and deputies and for increasing the share of responsible executives in this area as well.

It should not be thought that only economic measures on a national scale will lead to reductions in force. Organizational measures are often entirely sufficient. Today many management processes are organized in such a way that the increase in the size of the work force in allied sectors is inevitable. For example, the shortage of spare parts for the "Zhiguli" is well known. This has been associated with attempts to steal parts, which in turn has generated proposals to introduce a detailed recordkeeping system at VAZ. But this system would substantially increase the size of the managerial apparatus. But if free trade in spare parts were replaced by the practice requiring defective parts to be turned in before new parts can be purchased, the mandatory registration of all purchases of spare parts, the discontinuance of the practice of selling them to all comers, and their sale only to automobile owners, we believe that everything would change instantly. But this obvious measure is not being implemented. Instead the staff of OBKhSS [departments for combating the embezzlement of state property and speculation] is growing and it is demanded that VAZ increase its staff of record-keepers, etc.

The growth of the managerial work force in all its sectors is unopposed by the managerial apparatus itself. Therein lies the main difficulty of reducing the size of the work force today. Therefore it is inevitable that normative centralized orders and targets are the principal form of the effort to reduce the size of the work force. While the effort does, of course, produce a certain effect, we consider it important to emphasize that it does have its limitations.

There is the possibility of engaging in a genuine effort to reduce the size of the work force in the system of economic management by thoroughly realizing the task posed by the party: the task of making the transition from predominantly administrative to predominantly economic methods of management. Where economy has become the main task, the system of management will itself like a living, healthy organism be a constant safeguard against superfluous, alien organs, types of activity, and personnel.

Thus the problem today is not the problem of growth as such. The problem is that this growth takes place under conditions that lack sufficiently substantiated economic criteria for and constraints on this growth, that lack internal motivation to reduce work force size. The frequent result is the growth of the wrong links, the wrong categories of personnel, and the wrong occupations. The same thing also applies to staff reductions.

The question of work force size is inseparable from the basic problem of improving management. Within the framework of the general, comprehensive long-range program for the development of management, there should also be a section devoted to work force size.

We should also give more thought to the party's pronouncement that the present system of management is need of radical restructuring. And the orientation toward taking the laws of the present stage of NTP into account is one of the conditions if not the main condition to the success of this effort. This restructuring can become effective if it is based on the thorough, consistent assessment of patterns of the modern level of the socialist economy and the most important factors in its development.

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## EDUCATION

### FIRST DEPUTY MINISTER PANACHIN INTERVIEWED ON SCHOOL REFORM

Moscow UCHITEL'SKAYA GAZETA in Russian 15 Dec 84 pp 1-2

[Interview with F. G. Panachin, USSR first deputy minister of education by unnamed correspondent of UCHITEL'SKAYA GAZETA: "Current Interview: The Documents Have Been Adopted and Are Working"; date and place not specified]

[Text] The mail of UCHITEL'SKAYA GAZETA includes quite a few letters about the elaboration of the new documents that regulate the daily activity of schools and other teaching and educational institutions in the conditions of the reform. In connection with this, our correspondent turned with a number of questions to the USSR first deputy minister of education, F. G. Panachin.

[Question] Fedor Grigor'yevich, our questions reflect the vital interests of teachers, school directors, and other workers in education. Tell us, please, what is practically being done by the ministry in regard to the elaboration of the new documents?

[Answer] I will be more precise, we must talk not only about this, but also about the changes and additions in the effective normative acts. This is clearly stated in the Basic Directions of the Reform of the School and in subsequent decrees of the CPSU Central Committee and the USSR Council of Ministers. The Ministry of Education is implementing a detailed plan for the realization of these instructions. Work is proceeding on a whole series of documents--moreover, with respect to some of them, in close contact with union and union-republic departments and organizations, with the ministries of education of the union republics in particular. The Collegium of the USSR Ministry of Education has created a special commission representing all subdivisions and sectors of the system.

The most important and most labor-intensive task of our program and methodology work is the modernization of the educational plans and programs for the schools. What practically has already been done?

The USSR Academy of Pedagogical Sciences (the Scientific Research Institute for the Content and Methods of Instruction, in particular) has developed a common level of general education training of students in schools, vocational-technical schools, and institutions of secondary specialized education. It has basically



been approved by the Collegium of the ministry. The optimally necessary level and volume of general education knowledge and skills have been determined, which formation of an all-round and harmoniously developed individual in all three types of secondary educational institutions. This document will be examined by the Ministry of Higher and Secondary Specialized Education, the USSR State Committee for Vocational and Technical Education and the USSR Academy of Sciences. It will determine the content of the educational programs of the schools that are being reformed, which will be introduced beginning in 1986. The model programs of the 1st through the 4th grades with the beginning of instruction at age 6 in Russian and mathematics, as well as programs for acquainting students of the first and second grades with the world around them, for natural history for the third and fourth grades, labor training and physical education are already finished. The programs for the 1st through the 11th (12th) grades will be reviewed by the Presidium of the USSR Academy of Pedagogical Sciences and the collegia of the ministries in the immediate future.

The plan for the future 11 (12)-year school has been prepared and confirmed by the collegia. In terms of its leading parameters, it corresponds to the present plan. And this is natural, for the general education school is not in need of a radical break of the traditional selection of subjects being studied and a balanced schedule of instruction time. What is being proposed that is new?

First of all, the educational plan realizes the structure of the 11-year secondary school and guarantees the regulation of the educational load of the students, defined by the decree of the CPSU Central Committee and the USSR Council of Ministers "On the Further Improvement of the General Secondary Education of the Young and the Improvement of the Conditions of Work of the General Education School". In conformity with this, the time for labor training and for socially useful work is being increased. In the 1st through the 11th grades 51 weekly hours are allotted; of these, 23 weekly hours in the 2nd through the 11th grades are for socially useful work.

A partial correction of the instruction time for the study of individual disciplines has also been effected. Thus, the number of hours of the native language and mathematics is being increased in the beginning grades by virtue of the instruction of children from age 6 and the newly-introduced 4-year term in the elementary school. There is some reduction in the number of required hours of instruction in the upper grades and there is an increase in the time for optional subjects. In the national school, 2-3 hours are added in every grade for the study of the Russian language.

In the 1st through the 2nd classes, proposals call for the introduction of the subject "Introduction to the World Around Us" (with the preservation of "Natural History" in the 3rd, 4th and 5th grades); already beginning with this year, the study of the ethics and psychology of family life is being introduced in the 9th grades (one lesson per week).

I shall add that not long ago the collegium of the ministry approved a recommendation to teachers concerning the development of common educational skills of students which agree with presently effective educational programs and with the "Model Content of the Education of Pupils" (5th edition, 1984). For every

year of instruction, concrete abilities and skills have been determined in the organization of educational work, in the work with books and other sources of information, and in the cultivation of speech and writing.

[Question] Many letters contain questions about the transfer and final examinations in the schools. Are any changes being contemplated?

[Answer] Yes, they are being contemplated. The ministry has developed a new model instruction concerning the transfer and graduation of students. Many proposals of teachers, methodologists and organizers of public education were taken into account in its preparation. It reflects the impending changes in the school structure, the transfer and graduation of students who receive assignments for the summer, the procedure for exemption from examinations for various reasons, the list of mandatory final examinations in the 9th and 11th (12th) grades, instructions on the distribution of gold and silver medals and certificates of honor. The role of the pedagogical council is increasing. In particular, it has the right, in exceptional cases, to decide on the conditional transfer of students to the next grade, except the graduating 9th grade, who have year or summary unsatisfactory marks in one or two subjects. In conformity with the instruction being elaborated concerning conditional transfer, the students of the graduating 11th (12th) grades, who are not admitted to the examinations or have a summary unsatisfactory mark in one or several subjects, will not receive certificates of secondary education [attestaty], but appropriate academic references [spravki].

In schools of the union republics in which there are no transfer examinations, students are transferred to the next class on the basis of the year grades. The exemption of pupils for reasons of health from lessons on individual subjects will not influence the transfer from class to class and the graduation from the school.

The ministry also confirmed an instruction concerning the organization of the preparation and conduct of examinations by way of an external studies department for the course of an incomplete secondary and specialized school, in which it is specially set forth that this form is recommended, as a rule, for persons employed in various sectors of the national economy that do not have the conditions for the systematic attendance of education studies in evening and correspondence schools.

[Question] Is it impossible to return to labor education and training? What additional documents will the school receive?

[Answer] Following the "Statute on the Base Enterprise of the General Education School", approved by the USSR Council of Ministers and published in the UCHITEL'SKAYA GAZETA, a temporary list of professions, for which the training of students in the general education schools is being organized, has been developed and confirmed by the USSR State Committee for Labor and Social Problems, the Ministry of Education, and the State Committee for Vocational and Technical Education, jointly with the AUCCTU and other union ministries and departments. It numbers more than 700 professions.

Jointly with other interested departments, the USSR State Committee for Labor and Social Problems and the ministries of finance and education will, in the near future, set forth a procedure for the payment of labor of school children in the national economy.

Draft provisions for the inter-school study and production combine, for the pupils' production brigade in kolkhozes and sovkhozes, and for the organization of socially useful productive labor of pupils have been discussed comprehensively at the center and locally, and have basically been improved. It can be expected that normative acts will be published during the first quarter of 1985.

[Question] Tell us, please, what changes are being provided for by the documents on the training of teaching personnel?

[Answer] Being supported by the assistance of the scientific-methodological councils for all the pedagogical specialties, the proposals of the ministries of education and higher education of the union republics, and the pedagogical institutes of higher education, the ministry is redoing the plans and programs of the pedagogical educational institutions currently in effect, as well as the statute and instruction on the pedagogical practice of the students of the institutes and the students of the pedagogical colleges. This work will soon be completed. New educational plans are being created with a 5-year term of instruction for a number of specialties, the transfer to which will begin to be realized according to a schedule beginning in 1986. A new and, in our view, more perfect structure of psychological-pedagogical education has been developed. A plan has been drawn up for the publication of literature for the 12th Five-Year-Plan. Proposals have been prepared for curricula with reduced terms of instruction for persons who have completed pedagogical colleges.

As is well known, the Institute for Improving the Qualifications of Teachers of the Pedagogical Disciplines of the USSR Academy of Pedagogical Sciences is being reorganized into the All-Union Institute for the Retraining and the Improvement of Qualifications of Scientific-Pedagogical and Supervisory Personnel under this Academy, and the corresponding faculties of the pedagogical institutes of higher education and universities into faculties for the training and improvement of qualifications of the organizers of public education. What has been done in this direction?

An order of the USSR minister of education has been prepared concerning the creation of an institute composed of two faculties. The first--for increasing the qualifications of teachers of pedagogy and psychology with two currents of students of 175 each per year and with a term of instruction of 4 months, and the second--for supervisory personnel of public education with two currents of 150 each, with a term of instruction of 1 month. The statute on the institute has also been elaborated.

The collegium has approved the elaborated Statute on the Faculties for the Training and Improvement of Qualifications of the Organizers of Public Education in the Pedagogical Institutes and Universities. It is here that training of a reserve of supervisory personnel will begin to be conducted with a 3-month term of instruction. For the improvement of qualifications of school directors and other organizers of public education, a 2-month term has been established. Such faculties will be created for one administrative region (oblast, kray, republic) or several neighboring, adjacent ones.

A statute has basically been elaborated on the procedure for the certification of teachers, educators, senior pioneer leaders of general education schools and boarding schools and children's homes of all types, and educators of pre-school institutions, which will be confirmed upon the consent of the AUCCTC and the USSR State Committee for Labor and Social Problems.

[Question] What changes in the light of the reform are being introduced in the Statute of the Secondary General Education School?

[Answer] It is easier in this case to talk about a new edition, rather than about changes. The draft of the new Statute has been prepared.

The ministry also continues to work on a number of other documents that regulate the life of the school. In particular, on such as the criteria for the assessment of the activity of the school and the teacher; a Statute on the Parents' Committee of the School; a Model Structure for the Organs of Public Education, and others.

It is impossible not to mention here the preparation of a new edition of the Fundamentals of Legislation on Public Education. It is being undertaken by the Ministry of Education jointly with the union ministries of justice and higher education, as well as the USSR State Committee for Labor and Social Problems.

[Question] It is very alarming, Fedor Grigor'yevich, that both in the letters to the editors and in meetings with readers there are many critical signals about the dominance of reports and references. As far as non-normative accountability--the paper creation of local organizations--is concerned, everything is clear. The decree of the collegium of the ministry and the Central Committee of our trade union "On the Rational Use of the Work Time of Teachers and Directors of the General Education School", which was adopted in 1981, it must be supposed, remains fully in force. But here the accountability is normative and statistical. There, too, you know, there is much that is inexplicably superfluous. Among school directors there even exists a sad saying: "Whether you want to or not, go after the Osh [school accountability form]".

[Answer] Yes, the question is of no small importance. I can report that in October the collegium adopted the decision "On the Improvement of the Forms of Statistical Accountability". It was decided to exclude from Form Osh-1, 3, 9, and 10 a number of indicators that are not of great practical significance. Moreover, somewhat earlier Form Osh-2 (statistical reporting of the number of failing [students] by subjects) was abolished entirely. It is also planned to introduce changes and reductions in other forms. This will significantly reduce the normative reporting for general education day schools.

By far not all of the program and methodology work, as well as the normative-legal work, has been illuminated in our interview. A great deal is being done by the ministries of education of the union and autonomous republics, their scientific and methodological institutions. Unfortunately, not all and not always within the projected terms. The ministry will have to improve and perfect this work.



At the April (1984) Plenum of the CPSU Central Committee, K. U. Chernenko said: "The reform of the school is not a one-time measure. And the point is not only that it is calculated for two five-year-plans. When we are talking about living people, and all the more about children, it is impossible to assign everything in advance. Practice, no doubt, will introduce corrections in some of our outlines and plans, and there is no reason to be afraid of this. It is important not to lose sight of our strategic reference point--the formation of the all-round developed individual."

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## DEMOGRAPHY

### FAMILY ROLE IN DEMOGRAPHIC POLICY SCRUTINIZED

Moscow PRAVDA in Russian 6 Dec 84 p 3

[M. Bednyy, Professor: "The Family and Demography"]

[Text] Practice shows that despite the inertia of demographic processes it is possible to manage them. The family is the chief element through which and by means of which demographic policy is carried out. And this is understandable. Only in the family and with its help is it possible to change certain unfavorable population tendencies.

Several years ago PRAVDA gave an account of the working life of the village of Voloye in Kaluzhskaya Oblast where a tradition of large families had become established and had put down deep roots. We became interested in the reasons and sources of this tradition. The "secret" proved to be simple: in a large but compact village with a stable population social psychology and public opinion are in operation. A small family here, if one may put it so, is "without prestige." However, young people who have left a village with traditions of large families for other places, as a rule, lose those standards which are accepted, unfortunately, and have become established in the majority of the cities and villages of Russia. Such is the power of public opinion.

Our demographic future—both the science of our labor resources and the health of our future generations—depends upon the examples and the ways in which today's family is formed, and upon the experience and way of life it transmits to its children.

The decisions of the party and government on population, and especially the Decree of the Central Committee of the CPSU and USSR Council of Ministers "On Measures to Strengthen State Assistance to Families with Children" which was adopted in 1981 shows how great the state's interest is in creating the conditions and preconditions for the formation of a strong family which ensures the continuity of generations, the establishment of morality, and population growth. The measures which have been adopted have had their effect, and the uniform direction of state, family, and personal interests is embodied in this.

In 1970, with a birth rate level of 17.4 per thousand people in the population, the total number of children born came to 4,226,000; in 1981 the birth

rate came to 18.5 per thousand people, and the number of children born approximated 5 million. And only two years later the birth rate level had increased so substantially as never before during the entire postwar period—from 18.5 to 20.1 per thousand people. In absolute terms the additional number of those born in relation to 1981 had increased. And by the end of the century these people will be workers, scientists, designers, defenders of the homeland, and the mothers of the future generations of Soviet people. How important this is for the development of the country's productive forces and of the natural wealth of Siberia, the Far East, and the Far North is testified to by the present shortage of labor resources.

But this in no way makes it possible to rest content and to weaken attention to the problems of birth rate. And the decisive role here belongs to the family.

The way a family feels depends upon the social orientation of its members, upon its psychological aims, upon the behavior of the husband and wife, and upon the relationships between parents and children. The socialist way of life is best strengthened and perfected through the family, and through it an effective demographic policy is realized. This is why not only each of us, but our entire society is so interested in the stability of marriages.

The initiator of the introduction into practice of a scientifically substantiated system of measures to strengthen marriage and the family was Moscow. Since 1979 a division of the family and marriage which was created in Mossovet has been operating successfully. This service has been developing in the Balkan republics, in Bashkiriya, and in a number of cities of the Russian Federation.

In performing work on the efficient use of labor resources and on an improvement of the demographic situation the ispolkom of the Rostovskaya Oblast Council of People's Deputies has placed its emphasis on issues connected with concern for the family, the preparation of the youth for marriage, and the creation of the conditions for the birth of the second and third child.

A top priority task of the marriage and family sector at the oblast health care division is the organization of family services on an interdepartmental basis. "Marriage and the Family" consultation offices have been opened. The first of them is operating in the city of Shakhty. This is a unique medical and psychological center for the assistance to families in which conflicts have arisen. The results have exceeded the initial expectations: hundreds of families which were on the brink of disintegrating have been held together, as have thousands of newlyweds, and those who have decided to become married have been given skilled advice on the hygiene of marriage, health protection, and so forth.

The issues of strengthening the family are actively participated in by the permanent commissions of the ispolkoms of industry and the production of consumer goods, construction, trade, public catering, domestic services for

the population, public education, social security, culture, youth affairs, and others.

An exchange of the experience of family education has been set up in the system of universal education, and joint "round table" discussions are held between parents and school seniors.

The results of the many-sided and overall work to strengthen the family which is being carried out in Rostovskaya Oblast are already being felt. The number of divorces has decreased, and the birth rate has risen. But the most important thing is the change in the psychological climate and in the mood of those who are supposed to actively promote the strengthening of the family. A new psychological atmosphere is being established which is aimed at the strengthening of the bonds of marriage and the creation of a full and healthy family with two or three children.

When you become acquainted with the existing experience you think that it would be a good thing if the same demands were made upon the state of the social and demographic development of a region, city, rayon, or rural locality as is made upon the fulfillment of production assignments. But today this work is performed chiefly on the basis of enthusiasm. There does not exist any clear-cut system, and there are no criteria for evaluation. The most effective forms and methods of demographic policy are poorly generalized and poor work is done with their scientific analysis.

Many problems of strengthening marriage and the family have to be solved by health care. This is understandable: it is responsible for the health of our citizens. And the source of the "sickness" of many of our men and women are frequently the conditions which they themselves choose for themselves in their intimate marital relations. Research shows, for example, that widows or bachelors lead a less healthy form of life than their contemporaries who have families. In and of itself this promotes nervous and general sicknesses, and the abuse of alcohol. Here our health care must, in our view, watch more attentively and form a correct opinion about the most beneficial, from the medical point of view, relationships between the sexes and views of marriage and the family.

Intra-family relations and the psychological climate in the family has a direct influence on the character and behavior of its children. Thus it has been established that alcohol is more frequently abused by young people who have grown up in families where one or both of the parents have a predilection for it.

The health or lack of health of married couples is transmitted to one or another extent to their progeny. Many illnesses prevent the birth of children, while certain others lead to sterility. Thus, health care is faced by a broad field of activity to strengthen the family, to create the conditions for the birth of a healthy progeny, and, in the final analysis, to ensure the growth of the country's population.

However, the agencies and institutions of health care are still insufficiently active, in our view, in carrying out a demographic policy. This has been re-



flected, in particular, in the fact that in preparing the annual prophylactic medical examination of the population insufficient attention has been given to the problems of the family. It was not looked upon as an object of this service, nor as an important factor in preventing the sickness and strengthening the health of the entire population. However, as practice shows, it is difficult outside of the family to realize social, demographic, and medical programs.

All of our demographic programs are formed in the family. The direction in which the family will develop will determine the present and future of our society.

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